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ABSTRACT

Demand articulators called for changing and strengthening programs in educational administration at the University of Kansas. As a result of activities over a 2-year period, the existing program was discarded and a new one adopted reflecting an interdisciplinary leadership and decisionmaking rationale conceptualized with a systemic framework. The application of an open systems model required information and decisions about a multiplicity of historical and projected program outputs. Following output identification, retreats were held to consider throughput strategies and input needs. Throughputs were delineated in terms of a typology of subsystem dynamics. Finally, necessary inputs were identified, internal and external constraints were considered, specific courses were developed and sequenced, and various evaluative feedback mechanisms were explored for continuous program monitoring and assessment. The authors discuss the conceptual aspects of the systems model and the translation of that model into an applied systems framework for program revision and implementation. The utility and limitations of the systems approach are presented and analyzed within a case study narrative depicting circumstances, activities, and events at the University of Kansas between 1970 and 1973. (Author)

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A SYSTEMS MODEL AS A GUIDE TO PROGRAM REVISION

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One would be hard pressed to find a sizable segment of the American population unaware that public education and professional educators are being subjected to increasing criticism. Vocal critics of education seemingly tend to focus on both the processes and products of the public schools. Various educational delivery systems have been proposed as alternatives to the historically established public school institutions. In turn, institutions which have accepted responsibility for the preparation of professional educators, teachers and service personnel, are being charged with being ineffective, inefficient, non-reality oriented, and unresponsive to change. Assuming that at least a portion of these charges are justified, one concludes that preparation institutions and programs need upgrading if they are to achieve and maintain credibility. Carrying this conclusion to a logical end, programs that fail to change and be responsive will experience an early demise.

Then specifically, what is the incidence of change within programs designed by colleges and universities to prepare educational administrators? Much of the current literature suggests that educational administration itself has undergone dramatic structural and functional changes

and that preparation programs for administrators are in a period of transition. However, the literature of the recent past indicates that the 1950's and 1960's were also transitional decades. There is considerable evidence that some changes recommended in the past twenty years still await large-scale enactment. Support for this charge appears when one examines existing programs in juxtaposition with recommendations made by organizations such as AASA, UCEA, NSSE, and the Kellog Foundation.[1] At least two alternative explanations appear plausible. First, like society, educational institutions are in a constant state of flux and require different types of leadership competency over time; therefore, administrator preparation programs must be ever-changing, not static. Second, desirable refinements and modifications for these programs have been identified through research over the past twenty years, but the universities have been slow to adopt the recommendations. While the second explanation is more negative than the first, it remains that in either case needs persist for programmatic updating and upgrading and that a responsive change model would be useful as both a conceptual and operational guide.

This paper is addressed to consideration of a systemic model as a guide to the revision of programs for the preparation of educational administrators. Trial application of this model is discussed below within a case study narrative which describes crucial events and circumstances of 1970-73 at the University of Kansas.

Demand Articulators and Environmental Pressures. Logically, one may assume that change occurs in magnitude, direction, and speed relative to the demands for change and the organization's environmental constraints, both internal and external. In other words, wide-scale and rapid change

requires a perception that change is demanded and an organizational receptivity to change. Impetus for change in the preparation program in educational administration at the University of Kansas came from numerous sources.

First, the thrust came partially from within the School of Education faculty. The Dean, department chairman, and program area faculty decided in mid-1969 that, in view of predicted possibilities for faculty enlargement in 1970, new professors of educational administration should represent uniquely different areas of competence, recent graduate preparation, and a high commitment to research. Two new staff members were hired and brought to the program differing perspectives and biases which, when coupled with those of others on the faculty, precipitated value conflicts and crises sufficient to warrant early action on program revision. Departmental infighting was spirited, sometimes bitter, over various issues as theory versus practice, the value of the behavioral sciences, the basis for experientially based programs, and the role and type of research in educational administrator preparation. Thus, internal organizational motivation and climate were conducive to at least "tinkering with" the program; however, little clear direction for action existed.

Second, professional educational administrator organizations throughout the state began to reinforce the criticisms being verbalized by the national associations. In early 1971, representatives of the superintendents, curriculum specialists, elementary and secondary principals, and business officials of Kansas addressed the Kansas Conference of Professors of Educational Administration (KCPEA). Their probing analysis was taken as saying, "Look, times have changed and your programs have not! While

they might once have been strong, commendable programs, they are now losing their credibility." These criticisms were leveled at administrator training programs of the six state institutions of higher education collectively. Therefore, the KCPEA encouraged each state institution to begin immediately a serious self-appraisal of its program. It is important to note that the field practitioners suggested that programs should change, but that they not necessarily all be alike, that preparation should be at both pre-service and in-service levels, and that the institutions themselves should exercise their prerogative as to programmatic specifics and processes.

Third, the accountability issue intensified in 1972 relative to program efficiency. The State Board of Regents through its Council of Chief Academic Officers (COCAO) mandated that the state institutions cooperatively examine all programs in education to consider elimination of "costly duplication." Roughly concurrent to this action, a Kansas legislator introduced a bill which would close all but two of the state institutions' Schools of Education. Granted, the legislator's bill never got out of committee and the COCAO report[2] provided only limited basis for immediate substantive revisions; however, the impetus and climate for change was vividly apparent. Indeed, much of the change motivation was suddenly survival oriented, both personally and institutionally.

Fourth, reorganization of the School of Education into more autonomous departmental units generated an internal atmosphere of change and provided some direction. Increased authority brought additional departmental responsibility, including program review and revision. The Dean directed that departments clearly define and differentiate their respective programs and prepare productivity analysis reports in response to the COCAO questions regarding costly duplication.

This analysis revealed that 109 doctorates in educational administration had been conferred by the University of Kansas between 1961 and 1972. Of this number, fifty-three had assumed public school positions, forty-eight had obtained college or university posts as professors or administrators, six were working for educational agencies or business enterprises, and two were deceased. An analysis of the geographical distribution of doctoral graduates showed that forty-nine had remained in the state. Given these career routing and mobility data, the educational administration faculty faced troublesome questions about the preparation program's applicability in view of students' post-program diversification.

Thus, demands had been articulated, a climate conducive to change existed internally and externally, motivation (or at least anxiety) was high, and some insightful data had been collected. In addition, the faculty was knowledgeable about various programs of merit operational around the country. With the intense concern about demand inputs and productive outputs, the systems model began to emerge as a possible framework to guide program revision.

The Systems Model--Conceptual Aspects. Most professors of educational administration have had considerable exposure to systems thinking, if for no other reason than by virtue of the explosion in the publishing world of books espousing a "systems approach" to just about everything. The Kansas faculty of 1971-72 generally met this broad description, plus included one staff member with considerable interest and background in open systems theory. This professor developed a series of position papers and alternative systemic program models predicated largely on assertions made by Daniel Katz and Robert Kahn in The Social Psychology of Organizations.[3]

Underlying application of open systems theory to an educational organization is the assumption that the organization, or system, is defined as a set of interrelated components which function in an interdependent manner. The interdependent actions of these components are constructed so as to bring about intended changes in client behavior. The theoretical framework further suggests that educational systems be viewed as being in constant interaction with the surrounding environment in that the environment provides inputs and receives the systemic outputs.

All social organizations, as open systems, are assumed to have commonality of certain basic characteristics. First, they all import some form of energy from the external environment, transform this available energy, and export some product into the environment. Second, the pattern of activities of the energy exchange has a cyclic character in that the products exported by the system re-establish the sources of energy for input-throughput-output processes. Third, systems strive for negative entropy in the interest of survival, partially through differentiation, elaboration, and specialization of functions. Fourth, systems receive informational inputs, supportive and negative feedback, and have coding processes for receiving and acting on these inputs. Fifth, a steady state and dynamic homeostasis are system goals with respect to maintenance of some constancy in energy exchange and the preservation of the character of the system. Sixth, the principle of equifinality applies in that there exist alternative routes for a system to reach some final state from differing initial conditions.

Another aspect of open systems theory assumes that organizations may be divided into subsystems, both structurally and functionally, at least for analysis, planning, and operation. For these purposes, it is useful

to conceptualize the educational organization into five subsystems: production, maintenance, boundary, adaptive, and managerial. Primary process functions of the production subsystem focus on proficiency relative to task accomplishment and energy transformation within the organization. The maintenance subsystem mediates between task demands and human needs to keep the structure in operation. Transactional exchanges at system boundaries and obtaining social support and legitimation are functional responsibilities of the boundary subsystem. Having pressure for change as its motivator, the adaptive subsystem focuses on intelligence, research and development, and planning functions. Finally, the managerial subsystem has the multiple functions of resolving conflicts between hierarchical levels, coordinating and directing functional substructures, and coordinating external requirements and organizational resources needs and availability.

Insert Fig. 1 about here

Figure 1 is presented to illustrate in summary form the conceptual aspects of the systems model as discussed above. In simplified form the model indicates five of the major characteristics of organizations as open systems: inputs, throughput, outputs, feedback, and the cycling of events. Depicted also are the interactive relationships of the organization and its environment and the functional and structural interdependence of the five organizational subsystems. Given this conceptual base, the remainder of the paper will focus on application of the model to program

revision and description.

The Systems Model--Application Aspects. English speaking peoples learn at an early age to read the printed page from left to right and from top to bottom. This may be the appropriate way in which to "read" the preceding simplified systems model, but it is not the most functional way in which to operationalize it. If one "works through" the model from left to right, initial attention focuses on systemic inputs. However, in working from right to left, emphasis shifts to the system's products as the first order of business, internal processes next, and then the inputs necessary to activate the processes in order to produce the designated outputs. This is not to suggest discounting the importance of inputs from the system's environment, especially informational inputs. Rather, the assertion is being made that a somewhat different perspective which emphasizes product acceptability by the environment and analysis of all known interactions concurrently is advantageous in moving from the conceptual model to the operational, or implementation, model.

Thus, an early concern for the University of Kansas faculty of educational administration was the identification of desirable, anticipated program outputs and the delineation of the program purposes with supporting rationale. Inputs from demand articulators, data available from the analysis of doctoral graduates' career and mobility patterns, job market and placement information, regional population projections, and writings of educational and societal futurologists were helpful in approaching this initial problem.

The faculty, with student participation, adopted the position that the primary purpose of the Educational Administration Program Area is to

prepare teachers, supervisors, and administrators for leadership in public and private educational institutions. These positions include, but are not limited to, the following levels: public and private school building and district administrators, university and college administrators, educational agency personnel, and professors of educational administration. A secondary purpose was identified as participation in the preparation of administrative personnel for such organizations as hospitals, government agencies, and industry as a service function not necessarily related to degree programs.

The statement of rationale underlying these purposes emerged as follows:

> "A reasonable expectation of educational organizations is that their programs have an underlying rationale based on the philosophical, theoretical, and technical aspects of learning. Educational administration, as a specialized area of education, primarily involves the decision-making process as it affects the implementation and expedition of the learning experience in an educational organization. However, the decision-making process is influenced by interacting social, psychological, political, and economic variables composing the organizational environment. Consequently, the preparatory program for educational administrators at the University of Kansas focuses on developing (1) a philosophical, theoretical, and technical knowledge of learning programs, (2) a conceptual understanding of the environmental forces affecting the decision-making process, and (3) a specialized knowledge of techniques for assessing and influencing the environmental forces."

The adopted statements of program rationale and of product identification were designed to be compatible with the mission statement of the School

of Education which specifies the three functional categories of teaching, service, and scholarship. Most, but not necessarily all, of the demand articulators could agree with the foundations statements. However, these were addressed largely to output aspects of the applied systems model. Throughput, input, and feedback aspects still demanded staff attention.

Using the direction provided by the stated positions on program rationale and outputs, the faculty met in a series of retreats to develop broad operational guidelines applicable to the throughput processes. The following statements are representative of these guidelines. First, from recruitment through program completion and job placement, strong personal student-professor relationships are encouraged. Second, no sequence of courses is required for all students; rather, a personalized program is planned. Third, if the student's professional goals change, the proposed preparatory program will be modified. Fourth, while programs of study in educational administration are flexible and individualistic, common to all levels of preparation for degrees, for certification, and for specific administrative posts are five basic program components. These are as follow: (a) the administrative component, or specialized study; (b) the education core component, emphasizing knowledge bases, understandings, and technical abilities useful to the administrator regardless of organizational level or institutional classification; (c) the research component, focusing both on reviewing and utilizing and on conducting and reporting research; (d) the experience component, both pre-service and in-service; and (e) the cognate component, designed to place educational administration within a multi-disciplinary framework. Finally, the graduate program shall not be "cast in stone." The assessment and modification of the program shall be an on-going departmental responsibility.

The faculty and resident graduate students, using the above process guidelines, began to evaluate the existing course offerings, degree requirements, research thrust, and field service aspects of the educational administration program. The analysis produced disturbing, but not unforeseen, results. The only logical conclusion which could be made was that the status quo must go.

Many courses on the books were no longer being offered, were dated relative to new knowledge, or generally did not adequately reflect the interdisciplinary leadership, decision-making rationale of the overall program. Internal and external critics charged that the program consisted of little more than a hodgepodge of courses, a curious collection of professors with varying areas and degrees of expertise, and an unpredictably large number of tuition-paying graduate students. Research efforts were shown historically to have been fragmented, often nonfield oriented, seldom widely disseminated, and perhaps nonfunctional for any purpose other than fulfilling a degree requirement of the university. Little had happened recently to foster continuous liaison with the practitioners in the field and to provide services to that population. Overall, the existing program seemed to be more a function of degree requirements, certification criteria, and individual professors' whims than of any subscription to a program rationale.

The above is not to suggest that none of the pre-revision courses and program features were viable, responsive, and worthy of continuation. However, to expedite matters, the decision was made to drop <u>all</u> existing courses in educational administration and start over. Each professor was asked to develop by course title, credit hours, and course description offerings in his own area of expertise as identified by the professor and

agreed to by his faculty peers. Directions were to submit suggested courses consistent with the teaching-service-scholarship mission statement of the School of Education, with the adopted program rationale and purpose statements, and with meeting the needs of both the students and the environment into which they exit. This activity resulted in deleting entirely some courses, reinstatement of a limited few, extensive revision of others, and creation of new ones to fill programmatic voids. In addition, the faculty and students compiled a list of needed academic offerings for which the existing faculty had little or no expertise, for example, quantitative aspects of decision making and systems analysis.

Thus, the faculty found itself with product goals for the program in educational administration and the basic designation of throughput processes for producing these outputs. However, the faculty still faced the bureaucratic realities of program approval and acquisition of necessary resources, or inputs. The program document,[4] with purposes, rationale, and proposed courses, was processed through the governance channels of the department, the School, and the university. After considerable explanation, justification, and political maneuvering, the total package was approved in the summer of 1972 with a designated effective date of January 1, 1973.

Concurrent with efforts to obtain program approval, steps were taken to identify and to acquire resources necessary to program implementation. By virtue of one person retiring and one person resigning from the faculty, it became possible to hire two new professors with specific competencies and perspectives compatible with the new change-oriented program. The department chairman and the Dean were particularly supportive and influential in the staff recruitment processes and in freeing some constrained

resources for attracting the kinds of persons desired. Possibilities also were expanded for attracting new students to the program, due partially to increased fund availability through two federal grants and through assistantships designated primarily for students of educational administration.

Given the above events, activities, and decisions, it is now possible to summarize just how they fit within the systems model. The systemic elements of the University of Kansas educational administration preparatory program are depicted in Figure 2. Conceptual aspects of the systems model, as presented in the earlier figure, are operationally illustrated. Particular emphasis is placed on the open systems characteristics of inputs, throughputs, outputs, feedback, recycling, and the structural and functional interdependence of the organizational subsystems. The lack of specificity in the feedback loop phase of the descriptive implementation model should be noted. An information gathering system providing the basis for continuous evaluation and modification is still in the developmental stage.

Insert Fig. 2 about here

Discussion. As noted previously and as described above, the conceptual open systems model was operationalized by working backward through it from outputs, to throughputs, to inputs. In its original form, the applied operational model was developed for program change planning purposes only.

However, in its elaborated form as depicted in Figure 2, its potential increases. The systems model retains its planning utility, but assumes added dimensions relative to assignment of responsibilities, program monitoring, assessment of environmental relationships, and both curricular and fiscal decision making. Also, it provides a descriptive picture to the field, students, and faculty of what the program strives to produce for the environment, of how these objectives are to be attained, and the resources brought together to accomplish these ends. The emphasis on internal and external interdependence and interaction suggests that the systems model is not a static one, but rather is responsive.

The responsiveness feature of the applied model has demonstrated considerable utility for the University of Kansas. After the developed program gained formal university approval, but before it was even implemented, the faculty began to realize that some aspects of it were already obsolete, that there had been some glaring oversights, and that new expectations were emerging.

The two new staff members brought new interests, competencies, and perspectives to the program, many of which were unknown prior to their arrival. New students did the same. These inputs are having significant impact on the program and the structure within which it operates, especially relative to production and maintenance functions of the system.

After applying the systems model for almost two years, the newly surfacing needs for change have not come as surprises to the faculty. It is understood that new human inputs must be internalized into the system. They represent additional capabilities, personal and professional needs, and new demands and supports. In addition, the environmental demand articulators are continually presenting new expectations. For example,

the push from various groups for competency-based preparation programs and certification is beginning to be felt. It emerges that the system, in this case a program area of educational administration, is affected by and must be adaptive to both its own internal changes and those of its environment. The consequences of not being so are predicted to be an early loss of credibility and eventual entropy.

To summarize, an attempt has been made herein to describe the open systems model conceptually. The conceptual model was transformed into an applied model for planning and implementation of a revised program for the graduate study of educational administration. The impetus for, the processes for, and the results of using the systems model as a guide for program revision have been discussed.

Utility of the model has been clearly demonstrated, at least for the educational administration faculty and students at one institution. However, there is a caveat. The systems model appears to have considerable potential for wide application to diverse organizations, but the program which resulted from its application at the University of Kansas is not amenable to universal adoption. In other words, the model is generalizable; the program is not. Preparation programs in educational administration appropriately may be time and place specific and in a constant state of flux. They need to be responsive to the needs and capabilities of the organization and its environment. The systems model provides a useful conceptual and operational framework for planning, monitoring, and modifying a program in a responsive, responsible manner. It further provides the framework within which an institution can run a railroad while designing a new one.

Notes

1

See, for example: Jack A. Culbertson and Stephen P. Hencley (editors), Preparing Administrators: New Perspectives (Columbus, Ohio: University Council for Educational Administration, 1962). National Society for the Study of Education (Daniel E. Griffiths, editor), Behavioral Science and Educational Administration (Chicago: The Society, 1964). Committee for the Advancement of School Administration, Something To Steer By: Thirty-five Proposals for Better Preparation of School Administrators (Washington, D.C.: American Association of School Administrators, 1958).

2

Council of Chief Academic Officers, "Guidelines for Increasing Academic Efficiency at the State Colleges and State Universities" (Topeka: Kansas State Board of Regents for Colleges and Universities, 1972).

3

Daniel Katz and Robert Kahn, The Social Psychology of Organizations (New York: John Wiley and Sons, 1966).

4

The program rationale and purposes, components, course offerings, and degree routings are described in a document entitled "The Educational Administration Program Area" (Lawrence: Department of Administration, Foundations, and Higher Education, The University of Kansas, 1972. 11 pp., mimeographed).

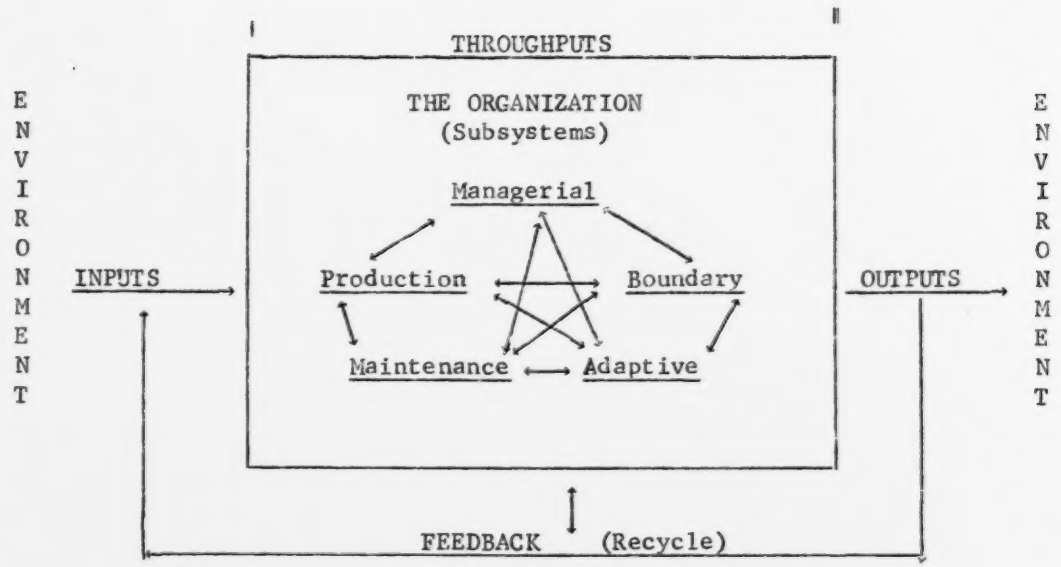

Figure 1. Simplified Systems Model: The System, Its Environmental and Subsystemic Interaction and Interdependence

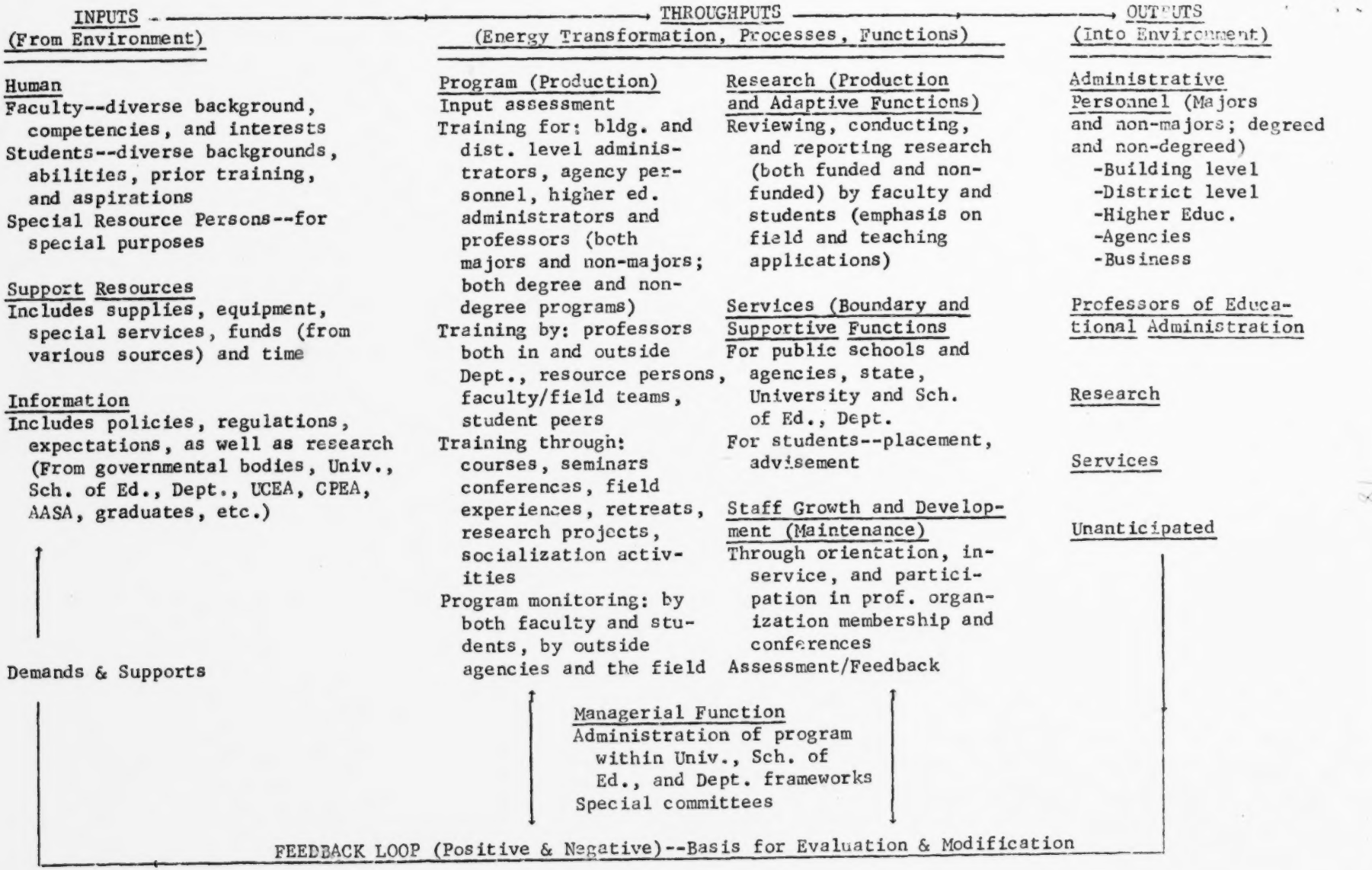
INPUTS
(From Environment)
Human
Faculty--diverse background, competencies, and interests
Students--diverse backgrounds, abilities, prior training, and aspirations
Special Resource Persons--for special purposes
Support Resources
Includes supplies, equipment, special services, funds (from various sources) and time
Information
Includes policies, regulations, expectations, as well as research (From governmental bodies, Univ., Sch. of Ed., Dept., UCEA, CPEA, AASA, graduates, etc.)
Demands & Supports
THROUGHPUTS
(Energy Transformation, Processes, Functions)
Program (Production)
Input assessment
Training for: bldg. and dist. level administrators, agency personnel, higher ed. administrators and professors (both majors and non-majors; both degree and non-degree programs)
Training by: professors both in and outside Dept., resource persons, faculty/field teams, student peers
Training through: courses, seminars conferences, field experiences, retreats, research projects, socialization activities
Program monitoring: by both faculty and students, by outside agencies and the field
Research (Production and Adaptive Functions)
Reviewing, conducting, and reporting research (both funded and non-funded) by faculty and students (emphasis on field and teaching applications)
Services (Boundary and Supportive Functions
For public schools and agencies, state, University and Sch. of Ed., Dept.
For students--placement, advisement
Staff Growth and Development (Maintenance)
Through orientation, in-service, and participation in prof. organization membership and conferences
Assessment/Feedback
Managerial Function
Administration of program within Univ., Sch. of Ed., and Dept. frameworks
Special committees
OUTPUTS
(Into Environment)
Administrative Personnel (Majors and non-majors; degreed and non-degreed)
-Building level
-District level
-Higher Educ.
-Agencies
-Business
Professors of Educational Administration
Research
Services
Unanticipated
FEEDBACK LOOP (Positive & Negative)--Basis for Evaluation & Modification

Figure 2. A Systems Model of the KU Educational Administration Program